

WHAT IS CLAIMED IS:

1. An information recording apparatus for recording information by irradiating light onto a multilayer information recording medium, the multilayer information recording medium having at least a first layer containing an electro-chromic material, sandwiched by electrode layers applying a voltage to said first layer to color said first layer, and a second layer containing an electro-chromic material sandwiched by electrode layers; comprising:

means for applying the voltage to said first layer;

first optical irradiating means for irradiating a first optical spot onto said first layer; and

second optical irradiating means for irradiating a second optical spot onto said second layer after irradiating said first optical spot onto said first layer.

2. An information recording apparatus as claimed in claim 1 wherein, both said first optical spot and said second optical spot correspond to substantially parallel laser beams, and wherein both said first optical irradiating means and said second optical irradiating means constitute a plurality of light sources arrayed along a substantially same straight line.

3. An information recording apparatus as claimed

in claim 2, further comprising means for positioning both said first optical spot and second optical spot on the same track or within number of 3 tracks.

4. An information recording apparatus as claimed in claim 2, further comprising means for detecting one of a tracking error signal and a track-address signal by one of the beams by employing at least two laser beams irradiated from said plurality of light sources.

5. An information recording apparatus as claimed in claim 1 wherein, said first optical irradiating means irradiates said first optical spot onto said first layer to speed up one of a coloring operation and de-coloring operation of said second layer.

6. An information recording apparatus as claimed in claim 1, further comprising means for performing an auto-focusing operation by irradiating said first optical spot onto said first layer.

7. An information recording method using an information recording medium having at least a first layer containing an electro-chromic material, sandwiched by electrode layers applying a voltage to said first layer to color said first layer, and a second layer containing an electro-chromic material sandwiched by electrode layers provided on the light incident side with respect to said first layer, comprising the steps of:

applying a voltage to said electrode layers;  
irradiating a first optical spot onto said

first layer;

increasing speed of a coloring reaction of said second layer by irradiating said first optical spot onto said first layer; and

irradiating said second optical spot onto said second layer to record information thereon after irradiating said first optical spot onto said first layer.

8. An information recording method using an information recording medium having at least a first layer containing an electro-chromic material sandwiched by electrode layers applying a voltage to said first layer to color said first layer, and a second layer containing an electro-chromic material sandwiched by electrode layers located on a side opposite to a light incident side with respect to said first layer, comprising the steps of:

applying a voltage to said electrode layer;  
irradiating a first optical spot onto said first layer;

increasing speed of a de-coloring reaction of said second layer by irradiating said first optical spot onto said first layer; and

irradiating a second optical spot onto said second layer after irradiating said first optical spot onto said first layer.

9. An information recording medium, comprising:  
a first layer containing an electro-chromic

material sandwiched by;

electrode layers applying a voltage to said first layer to color said first layer; and

a layer for increasing speed of one of a coloring operation and a de-coloring operation in response to one of an light irradiation and a temperature.

10. An information recording medium as claimed in claim 9, further comprising a layer non-recorded information thereon but colorable by applying thereto a voltage.

11. An information recording medium as claimed in claim 9, further comprising a phase change recording layer provided between said first layer and one of said electrode layers.

12. An information recording medium as claimed in claim 9, further comprising a photo-conductor layer provided between said first layer and one of said electrode layers.

13. An information recording medium as claimed in claim 9, wherein said electro-chromic layer includes a poly-thiophene derivative organic material.

14. An information recording medium as claimed in claim 9, wherein said first layer includes a material mixed an electroluminescent material with a photo-chromic material.